



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

52X

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/823,528	03/30/2001	Han-Ming Wu	4290P10627	7457

7590 02/19/2004

Michael A. Bernadicou  
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP  
Seventh Floor  
12400 Wilshire Boulevard  
Los Angeles, CA 90025-1026

EXAMINER

KACKAR, RAM N

ART UNIT PAPER NUMBER

1763

DATE MAILED: 02/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/823,528

Applicant(s)

WU ET AL.

Examiner

Ram N Kackar

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on 10 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-14 and 30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-14 and 30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 7-8 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Ogawa Kaoru (JP 04144130)

Ogawa Kaoru discloses a plasma chamber (Abstract and Fig 3), a circular (solid) shield plate and a support structure for the shield plate (Fig 3). Regarding claim 8 it is inherent that the dimensions of the shield plate will be determined according to size of substrate and the plasma chamber. Regarding the claim of the shield being stationary, it is an intended use limitation. The shield of Ogawa Kaoru does not have to rotate. It could be just left stationary.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-5, 8-11 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lenz et al (US 5534751) in view of Ogawa Kaoru (JP 04144130).

Lenz et al disclose a plasma chamber (Fig 1), a circular shield plate of dielectric to confine the plasma (to actively direct ion flux) and a support structure also of dielectric having 6

Art Unit: 1763

support members (Fig 2 and Col 6 lines 16-26) and the thickness of shield plate being 2.4 mm (Col 7 line 8). The apparatus disclosed by Lenz et al discloses that the apparatus could be used for etching or CVD.

Lenz et al do not disclose the shield to be a solid circular plate.

Ogawa Kaoru discloses a circular (solid) shield plate and a support structure for the shield plate (Fig 3-3).

Therefore it would have been obvious for one of ordinary skill in the art at the time invention was made to have a solid shield to actively direct ions outside the shield for uniformity of etching.

Regarding claims 10-11, mean free path is a process parameter dependent upon pressure. Obviously, the dimensions of the apparatus depend upon the process parameters and are therefore optimized accordingly as a routine.

5. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa Kaoru (JP 04144130) in view of Henderson et al (US 6008130).

Ogawa Kaoru discloses a plasma chamber (Fig 3), a circular (solid) shield plate and a support structure for the shield plate (Fig 3-3).

Ogawa Kaoru does not disclose shield plates with rounded corner edges and a support structure for the shield plates.

Henderson et al disclose a plasma chamber (Fig 1), shield plates with rounded corner edges and a support structure for the shield plates (Fig 1-32).

Art Unit: 1763

Therefore it would have been obvious for one of ordinary skill in the art at the time invention was made to have a rounded edge of the shield plate for safety reason as well as not to have deposits, which could easily flake off.

***Response to Amendment***

6. Applicant's arguments filed 11/10/2003 have been considered but not found persuasive.

Applicant argues that amended claims 1 and 30 claiming stationary shield are not anticipated by the prior art. As explained above being stationary is an intended use limitation, since the shields could be just left stationary.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Applicant suggests that the combination is improper because Ogawa Kaoru does not disclose a solid shielding plate. This is incorrect since the abstract clearly says a shielding plate and not a ring etc.

Applicant argues that Henderson discloses only annular corners to be rounded off. Henderson discloses top and bottom edge of shield rings facing the plasma environment rounded off since those edges only affect the process and plasma. The solid shield has only top and

Art Unit: 1763

bottom edge facing the plasma. Rounding of these edges as per the teaching of Henderson would have been beneficial and obvious.

### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N Kackar whose telephone number is 571 272 1436. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on 571 272 1439. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1763

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RK

  
THOMAS WILLS  
SUPERVISOR PATENT E  
TECHNOLOGY CENTER